

THREE NEW STOMATOPOD CRUSTACEANS FROM THE PACIFIC COAST OF COSTA RICA

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Abstract.—*Gonodactylus albicinctus*, *G. costaricensis*, and *Nannosquilla canica* are described from specimens collected off the Pacific coast of Costa Rica.

Among the stomatopod Crustacea collected by one of us (M. L. R.) while participating in the R/V *Searcher* Expedition to Costa Rica in 1972 are three species, two in *Gonodactylus* and one in *Nannosquilla*, which appear to be undescribed. These three species are characterized below, so that names can be used in a review of the distributional ecology of Costa Rican stomatopods which is in preparation.

All of these specimens have been deposited in the Division of Crustacea, National Museum of Natural History, Smithsonian Institution. For each species specimens other than the holotype are paratypes. Measurements are in millimeters; total length is abbreviated to TL. Original references for other species discussed below can be found in Schmitt (1940) and Manning (1972). We thank Lilly King Manning for providing the illustrations.

Gonodactylus albicinctus, new species

Fig. 1

Material.—COSTA RICA: BAHIA HERRADURA; 09°38'45"N, 84°40'55"W; 17 m; side of outer reef; mud, shell, rocks, little if any coral, sand pockets; 10 March 1972; R/V *Searcher* Sta. 450; M. Reaka, leg.: 1♂, TL 25 mm (holotype, USNM 172234), 1♀, TL 19 mm. ISLA DEL CANO; 08°43'15"N, 83°53'07"W; 9 m; sand, coral, rubble; 14 March 1972; R/V *Searcher* Sta. 471; M. Reaka, leg.: 1♀, TL 13 mm.

Diagnosis.—Rostral plate (Fig. 1*b*) with anterolateral angles acute but not spiniform. Ocular scales (Fig. 1*b*) projecting laterally, rounded. Pleura of anterior 5 abdominal somites unarmed posterolaterally. Sixth abdominal somite with 6 carinae, swollen in male at TL 25 mm, each terminating posteriorly in sharp spine. Abdominal width–carapace length indices 788–806. Telson (Fig. 1*a*) of *oerstedii*-type, length and width subequal, dorsal carinae ornamented with tubercles. Median carina strongly arched dorsally, slender in female, broadly oval in male, with posterior median spine. Accessory median carinae long, almost as long as median, fused posteriorly, terminating in 3-spined corona under apex of median carina; fused part of

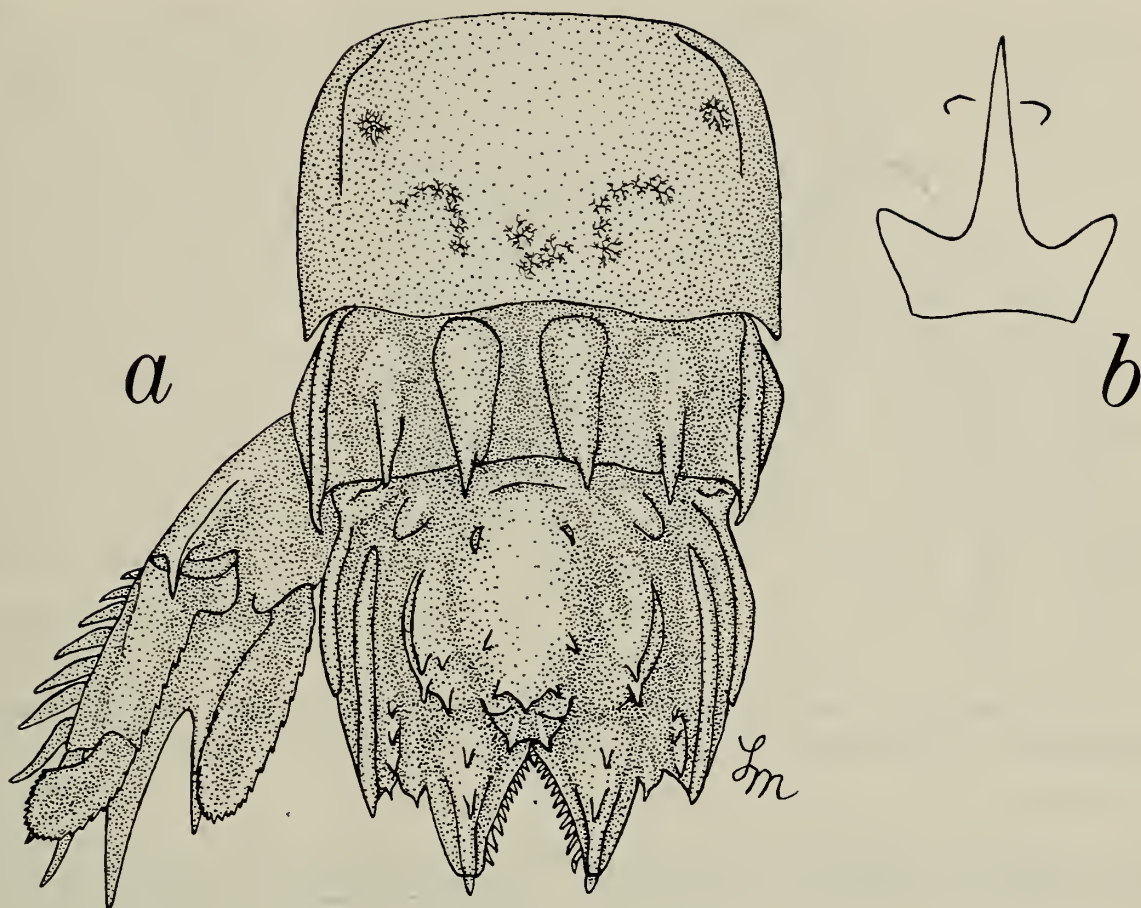


Fig. 1. *Gonodactylus albicinctus*, female paratype, TL 19 mm: a, Posterior part of body; b, Rostral plate and ocular scales.

these carinae obliterated by inflation of carinae in male. Knob prominent, with 2 spinules. Anterior submedian carinae slender, with 1 posterior spine flanked ventrally by 1–2 spinules. Carinae of submedian teeth slender, each with 1–2 dorsal spinules. Accessory intermediate, intermediate and marginal carinae sharp, accessory intermediates each with 3 dorsal spinules. 3 pairs of marginal teeth present, submedians with movable apices, intermediates sharp, laterals blunt but distinct. 11–12 submedian and 2 intermediate denticles present. Uropodal exopod with 10 movable spines.

Color.—In life tan, with conspicuous white band across sixth abdominal somite; meral spot is white.

In preservative, thoracic and abdominal somites with irregular median dark patch, those on abdomen flanked laterally by submedian dark crescent, that in turn flanked laterally by small dark spot. Telson lacking dark spots anteriorly.

Measurements.—TL of male 25 mm, of 2 females 13 and 19 mm. Other measurements, in mm, of male: rostral plate length 2.0, width 1.8; carapace length 5.2; fifth abdominal somite width 4.1; telson length 3.5, width 3.5.

Remarks.—This small species resembles *Gonodactylus bahiahondensis*

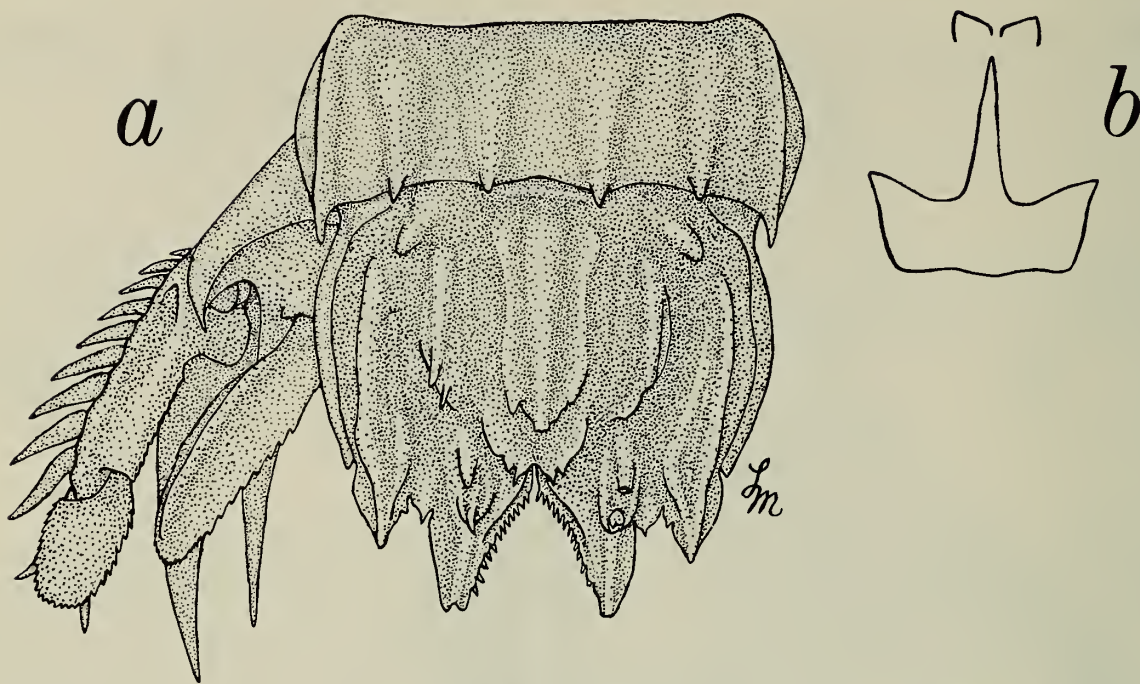


Fig. 2. *Gonodactylus costaricensis*, female paratype, TL 31 mm: a, Posterior part of body; b, Rostral plate and ocular scales.

Schmitt, 1940, but differs in having the ocular scales more produced laterally, the rostral plate blunt rather than spiniform anterolaterally, and more spines on the carinae of the telson, especially the accessory medians which have 1–2 dorsal tubercles. The knob in this species is not as distinctly bilobed as in *G. bahiahondensis*.

In life the meral spot in this species is white, whereas it is powder blue in *G. bahiahondensis*. The two species may occur together and can be distinguished in the field by this feature.

Name.—The specific epithet is from the Latin and alludes to the transverse white band on the abdomen of this species in life.

Gonodactylus costaricensis, new species

Fig. 2

Material.—COSTA RICA: BAHIA HERRADURA; 09°38'45"N, 84°40'55"W; 20 m; tip of outer reef; mud, shell, rocks, little if any coral, sand pockets; 9 March 1972; R/V *Searcher* Sta. 447; M. Reaka, leg.: 2♀, both TL 35 mm. ISLA DEL CANO; 08°43'15"N, 83°53'07"W; 9 m; sand, coral, rubble; 14 March 1972; R/V *Searcher* Sta. 471; M. Reaka, leg.: 1♀, TL 32 mm (holotype, USNM 172235). ISLA DEL CANO; intertidal pool, in and under coral rubble and basalt boulders; March 1972; M. Reaka, leg.: 4♀, TL 25–34 mm. ISLA DEL CANO; 08°42'55"N, 85°54'W; 20 m; pinnacle at corner of island close to shore, rock outcrop; 19 March 1972; R/V *Searcher* Sta. 491; M. Reaka, leg.: 1♀, TL 30 mm.

Diagnosis.—Rostral plate (Fig. 2b) with anterolateral angles sharp, spi-

niform. Ocular scales (Fig. 2*b*) rather broad, squarish or subrectangular, not produced laterally. Pleura of anterior 5 abdominal somites unarmed posterolaterally. Sixth abdominal somite with 6 sharp carinae, each produced into posterior spine. Abdominal width–carapace length indices 750–788. Telson (Fig. 2*a*) of *oerstedii*-type, length and width subequal or slightly broader than long, carinae ornamented with tubercles. Median carina low, sharp, terminating posteriorly in spine. Accessory median carinae usually long, extending anteriorly past midlength of median, often ornamented posteriorly with spinule and with ridge extending toward median carina. Anterior surface of telson usually with spined tubercle at level of intermediate carinae of sixth abdominal somite. Knob prominent, armed with 3 or 4 spinules. Anterior submedian carinae sharp dorsally, terminating in posterior spine flanked posteriorly or ventrally by second spine or spinule, carina flanked laterally and/or mesially by low but distinct carina. Carinae of submedian teeth slender, with 2 or 3 spinules anteriorly. Accessory intermediate, intermediate and marginal carinae sharp, accessory intermediates with 1–3, usually 2, spinules dorsally. 3 pairs of marginal teeth present, submedians with movable apices, 11–12 submedian, 2 intermediate, and no lateral denticles present. Outer margin of uropodal exopod with 10–11 spines.

Color.—In life a speckled species ranging from scarlet to mottled brown to emerald; meral spot powder blue.

In preservative, body completely covered with small dark spots, abdominal somites with one larger spot laterally above each pleuron. Telson with 4 black spots anteriorly.

Measurements.—Females only examined, TL 25–35 mm. Other measurements of female holotype, TL 32 mm; rostral plate length 2.5, width 2.6; carapace length 8.0; fifth abdominal somite width 6.2; telson length 5.5, width 5.5.

Remarks.—This species superficially resembles *Gonodactylus lalibertadensis* Schmitt, 1940, but differs in that the ocular scales are not produced laterally, the anterolateral angles of the rostral plate are sharp, almost spiniform, and the denticles of the telson are arranged differently, those on the submedian teeth being arranged in a single row rather than in two rows.

In life this species has powder blue meral spots; they are white in *G. lalibertadensis*.

Name.—The specific epithet alludes to the apparent widespread occurrence of this species off Costa Rica.

Nannosquilla canica, new species

Fig. 3

Lysiosquilla decemspinosa.—Schmitt, 1940:189, fig. 20*c* [part, not fig. 20*a*, *b*].—Manning, 1961:30 [part]. [Not *Lysiosquilla decemspinosa* Rathbun, 1910.]

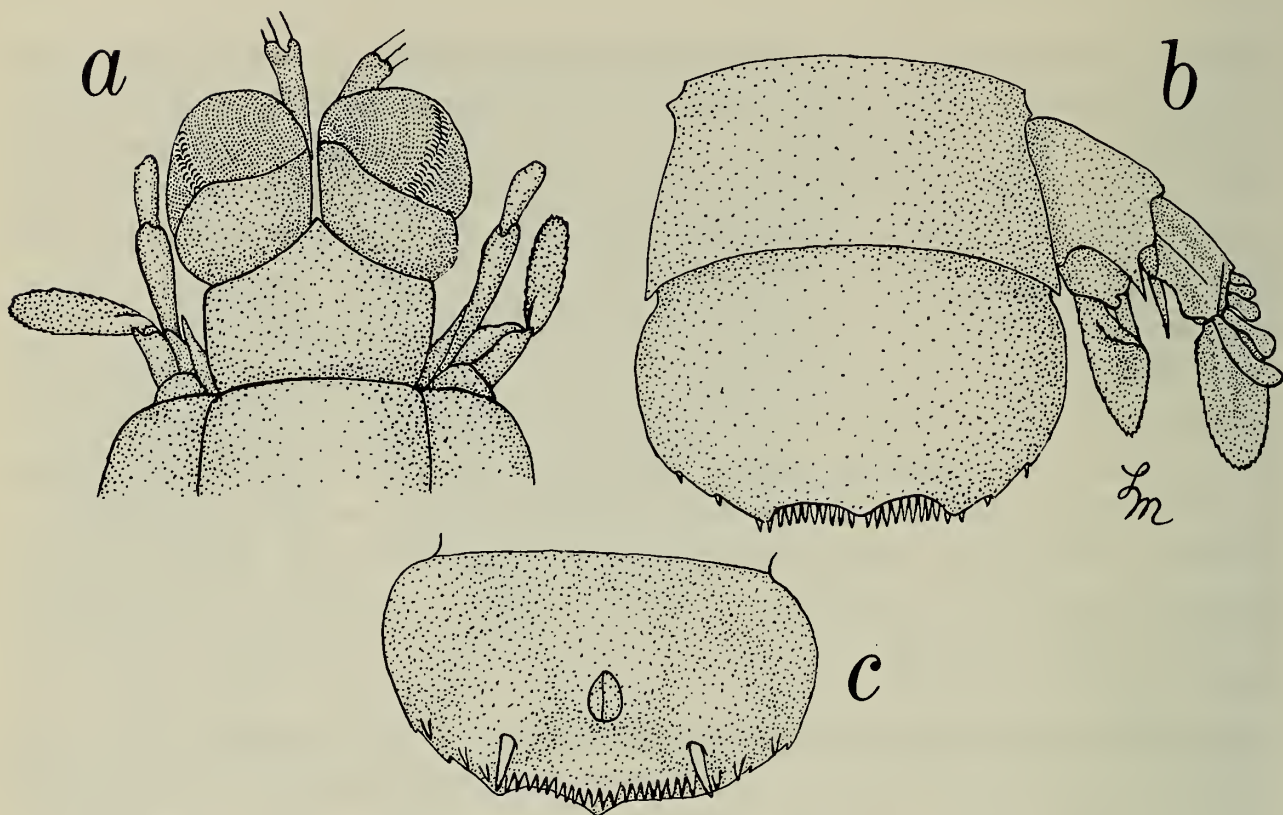


Fig. 3. *Nannosquilla canica*, female holotype, TL 16.5 mm: a, Anterior part of body; b, Sixth abdominal somite, telson and uropod; c, Telson, ventral view.

Material.—COSTA RICA: ISLA DEL CANO; 08°43'15"N, 85°53'07"W; 15 m; in sand around base of pinnacle; R/V *Searcher* Sta. 472; M. Reaka, leg.; 2♀ TL 15.0–16.5 mm (larger is holotype, USNM 172236). PLAYAS BLANCAS; 3–5 fms (5–9 m) 8 February 1935; Allan Hancock Pacific Expedition, Sta. 460: 1♂ (damaged) TL ca. 18 mm (USNM 81684).

Diagnosis.—Eye stout, cornea subglobular, set obliquely on stalk. Rostral plate (Fig. 3a) pentagonal, unarmed, apex obtuse. Dactylus of claw with 11–12 teeth. Mandibular palp absent. 4 epipods present. Basal segment of each pereopod with posterior spine. Abdomen flattened, smooth, anterior 5 somites unarmed, sixth somite pointed posterolaterally. Telson (Fig. 3b, c) broader than long, false cave produced into 3 major obtuse prominences posteriorly, blunt median and more acute submedians, latter flanked laterally by 2 sharp, small teeth on each side. Marginal armature of telson consisting of, on each side, 10 submedian denticles in transverse row, 1 fixed submedian tooth, and 3 submarginal lateral denticles. Uropod (Fig. 3b) with 1–2 stiff setae on inner margin and 5–6 spatulate spines on outer margin of proximal segment of uropodal exopod. Inner spine of basal prolongation of uropod much the longer.

Measurements.—Male damaged; females, TL 15.0–16.5 mm. Other measurements, in mm, of female holotype, 16.5 mm long: carapace length 2.5; cornea width 0.8; rostral plate length 0.8, width 1.1; fifth abdominal somite width 2.5; telson length 1.4, width 2.1.

Remarks.—This species superficially resembles *N. decemspinosa* (Rathbun, 1910), but differs in having stouter eyes, a pentagonal rather than subrectangular rostral plate with the anterolateral margins sloping toward a blunt apex and the lateral margins very divergent, more lateral marginal teeth and denticles on the telson, and a posterior spine on the basal segment of each pereopod.

The submedian marginal teeth of the telson in the two smaller specimens from Isla del Cano appear to be fixed rather than movable. They are clearly movable in the larger specimen, a damaged male.

One of the three specimens from Costa Rica assigned to *Nannosquilla decemspinosa* by both Schmitt (1940) and Manning (1961), that taken sublittorally, is identifiable with *N. canica* rather than Rathbun's species. The other two specimens, from Isla San Lucas, Gulf of Nicoya, are identifiable with *N. decemspinosa*.

Name.—The specific epithet is derived from the name of the type-locality, Isla de Cano.

Literature Cited

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